

WHAT IS CLAIMED IS:

1. A biopsy instrument comprising:
 - a base assembly including a firing mechanism;
 - 5 a probe assembly detachably mounted to said base assembly, said probe assembly comprising:
 - a cutter assembly comprising:
 - a cutter;
 - a gear mechanism adapted to move said cutter;
 - 10 a piercer assembly comprising:
 - a piercer;
 - a probe mount;
 - a drive assembly detachably mounted to said cutter assembly, said drive assembly comprising:
 - 15 a flexible drive shaft;
 - a transmission comprising:
 - a first bevel gear operatively connected to a distal end of said flexible drive shaft;
 - a second bevel gear intermeshed with said first bevel gear and operatively connected to said gear mechanism.
 - 20
2. A biopsy instrument comprising:
 - a base assembly including a firing mechanism;
 - 25 a probe assembly detachably mounted to said base assembly, said probe assembly comprising:
 - a cutter assembly comprising:
 - a cutter;
 - a first drive gear;
 - 30 a gear mechanism adapted to move said cutter wherein said gear mechanism includes a second drive gear adapted to mesh with said first drive gear;

a piercer assembly comprising:

a piercer including a cutter lumen adapted to receive said cutter;

a probe mount adapted to slideably connect said piercer to said cutter assembly;

a drive assembly detachable mounted to said cutter assembly, said drive assembly comprising:

a flexible drive shaft adapted to be connected at its proximal end to a control unit including a motor;

a transmission adapted to transmit motion from a distal end of said flexible drive shaft to said gear mechanism, said transmission comprising:

a first bevel gear operatively connected to a distal end of said flexible drive shaft;

a second bevel gear intermeshed with said first bevel gear at a first angle with respect to said first bevel gear and operatively connected to a releasable drive mechanism adapted to slideably connect with a proximal end of said gear mechanism.

3. A medical instrument according to Claim 2, said medical instrument further comprising a coupling alignment sleeve operatively connected to said releasable drive mechanism.

4. A transmission assembly for a medical instrument said transmission assembly comprising:

a mounting bracket;

a transmission plate;

a rotation coupling assembly comprising:

a rotation gear;

a rotation drive coupling;

a translation coupling assembly comprising:
a translation gear;
a translation drive coupling;
a thumbwheel rotation assembly comprising:
5 a port drive coupling;
a first port gear;
a second port gear;
a knob post;
an electrical cable strain relief;
10 a clamping plate assembly comprising:
a rotational bevel gear;
a translational bevel gear;
a rotation shaft;
a translation shaft;
15 an encoder assembly comprising:
a first bearing assembly comprising:
a bearing;
an encoder;
a flex relief.

20

5. The transmission assembly of Claim 4 further comprising a gear adapter with
and elongated adapter slot operatively connected to said rotation bevel gear.